

REMARKS/ARGUMENTS

Claims 3 and 4 are pending in this application.

In the Office Action dated March 28, 2008, the Examiner rejected Claim 3 under 35 U.S.C. § 103(a) as being obvious over Tanaka et al. (U.S. 6,757,659) in view of Hibino (U.S. 4,815,133) and Tatsuya et al. (U.S. 7,292,697), and Claim 4 under 35 U.S.C. § 103(a) as being obvious over Tanaka et al. in view of Hibino and Tatsuya et al., and further in view of AAPA.

Applicant respectfully traverses the rejections of Claims 3 and 4.

Applicant's Claim 3 recites:

An audio apparatus comprising:

an audio mixing circuit that inputs a left channel audio signal, a right channel audio signal, a center channel audio signal, a surround left channel audio signal, a surround right channel audio signal and a sub-woofer channel audio signal and that is arranged to deliver output by respectively mixing a center channel audio signal, a surround left channel audio signal, and a sub-woofer channel audio signal with a left channel audio signal in a predetermined ratio, a center channel audio signal, a surround right channel audio signal, and a sub-woofer channel audio signal with a right channel audio signal in a predetermined ratio;

an audio signal conditioning circuit that inputs the output signal of the audio mixing circuit and adjusts the signal waveforms;

a power amplifier section including a plurality of power amplifiers that amplify audio signals whose signal waveform has been adjusted; and

a speaker section including a plurality of speakers driven by the amplified audio signals. (emphasis added)

In Section No. 3 on pages 2-4 of the outstanding Office Action, the Examiner alleged that the combination of Tanaka et al., Hibino, and Tatsuta et al. teaches each of the features recited in Applicant's Claim 3. The Examiner admitted that Tanaka et al. fails to teach or suggest mixing the audio signals as recited in Applicant's Claim 3 and fails to teach or suggest a power amplifier section or speakers as recited in Applicant's Claim 3. In the paragraph bridging pages 2 and 3 of the outstanding Office Action, the Examiner alleged that Hibino teaches mixing the audio signals as recited in Applicant's Claim 3 and alleged that Tatsuta et al. teaches a power amplifier section and speakers as recited in Applicant's Claim 3.

Applicant respectfully disagrees because:

(1) the Examiner's proposed combination of Tanaka et al. and Hibino is improper; and

(2) Tanaka et al., Hibino, and Tatsuya et al., alone or in combination, fails to teach or suggest the feature of "an audio mixing circuit that inputs a left channel audio signal, a right channel audio signal, a center channel audio signal, a surround left channel audio signal, a surround right channel audio signal and a sub-woofer channel audio signal and that is arranged to deliver output by respectively mixing a center channel audio signal, a surround left channel audio signal, and a sub-woofer channel audio signal with a left channel audio signal in a predetermined ratio, a center channel audio signal, a surround right channel audio signal, and a sub-woofer channel audio signal with a right channel audio signal in a predetermined ratio" as recited in Applicant's Claim 3.

First, contrary to the Examiner's allegations, it would not have been obvious to one having ordinary skill in the art at the time of the invention to combine Hibino with Tanaka et al. because Hibino and Tanaka et al. are directed to completely different processes. In the paragraph bridging pages 3 and 4 of the Office Action, the Examiner alleged that one of ordinary skill in the art would have combined the features of Tanaka et al., Hibino, and Tatsuya et al. to extract the difference signals and to improve the sound quality.

Tanaka et al. is directed to a process of encoding six audio channels so that the encoded signal can be recorded on a CD, as shown in Fig. 1 and described in column 7, lines 14-18 and 38-52 of Tanaka et al. Hibino is directed to extracting indirect sound components from left and right audio signals and then mixing the extracted sound components back into the left and right audio signals to ensure "a listening ambience substantially equal to that of a listening room or a concert hall," see column 1, lines 57-61 and Fig. 1 of Hibino. It would not have been obvious to one of ordinary skill in the art to combine a system for encoding signals to be recorded on a CD with the listening ambience enhancing system of Hibino. One of these references is directed towards storing musical information, whereas the other is directed towards playing music in a specific venue. While the Examiner has alleged that the proposed modification would improve the sound quality of the system of Tanaka, the Examiner has failed to explain how or why the proposed modification would or could actually achieve such improvement in the sound quality.

One of ordinary skill in the art would easily understand that modifying Tanaka et al.'s encoding scheme for recording an audio signal on a CD in view of the teachings of Hibino of mixing the audio signals would not improve the sound quality. One of ordinary skill in the art would not mix the audio components of Tanaka et al. in order to "extract the difference signals" as alleged by the Examiner because the audio data of Tanaka et al. is being encoded on a CD. Mixing the data of Tanaka et al. before encoding it on a CD would modify the original audio data thereby providing an imperfect and altered copy. At best, the mixing of Tanaka et al. would be performed on an output of a device reading the CD of Tanaka et al., and this mixing would still not involve "a left channel audio signal, a right channel audio signal, a center channel audio signal, a surround left channel audio signal, a surround right channel audio signal and a sub-woofer channel audio signal" as recited in Claim 3.

Second, even if Hibino and Tanaka et al. were combinable, which they are not, Hibino fails to mention a center channel audio signal, a surround left channel audio signal, a surround right channel audio signal, and a sub-woofer channel audio signal. That is, Hibino fails to provide any teachings or suggestions that would lead one of ordinary skill in the art to "mix the center channel audio signal, the surround left channel audio signal, and the sub-woofer channel audio signal with the left channel audio signal" of Tanaka et al. in a "predetermined ratio" or to "mix the center channel audio signal, the surround right channel audio signal, and the sub-woofer channel audio signal with the right channel audio signal" of Tanaka et al. in a "predetermined ratio" as is recited in Claim 3 of the present invention. Hibino only teaches mixing elements of the left audio signal with elements from the right audio signal, as described in column 7, lines 14-18 and 38-52. Mixing one of the left and right audio signals with the subwoofer audio signal, for example, would not extract any indirect sound components. One of ordinary skill in the art at the time of the invention would not have modified the device of Tanaka et al. in view of Hibino to mix a left channel audio signal, a right channel audio signal, a center channel audio signal, a surround right channel audio signal, a surround left channel audio signal, and the sub-woofer channel in the predetermined ratios as recited in the Claims of the present application.

Furthermore, Tatsuya et al. fails to cure these deficiencies of the above-discussed prior art references. Tatsuya et al. is directed to an audio system for correcting an output of two front channel loudspeakers to improve a sound field and reality sensation. However, Tatsuya et al. fails to teach or suggest delivering an audio output by “respectively mixing a center channel audio signal, a surround left channel audio signal, and a sub-woofer channel audio signal with a left channel audio signal in a predetermined ratio” and “a center channel audio signal, a surround right channel audio signal, and a sub-woofer channel audio signal with a right channel audio signal in a predetermined ratio” as recited in Applicant’s Claim 3.

Thus, the combination of Tanaka et al., Hibino, and Tatsuya et al. does not teach or suggest the feature of “an audio mixing circuit that inputs a left channel audio signal, a right channel audio signal, a center channel audio signal, a surround left channel audio signal, a surround right channel audio signal and a sub-woofer channel audio signal and that is arranged to deliver output by respectively mixing a center channel audio signal, a surround left channel audio signal, and a sub-woofer channel audio signal with a left channel audio signal in a predetermined ratio, a center channel audio signal, a surround right channel audio signal, and a sub-woofer channel audio signal with a right channel audio signal in a predetermined ratio” as recited in Applicant’s Claim 3.

Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka et al. in view of Hibino and Tatsuya et al.

The Examiner has relied upon AAPA to allegedly cure various deficiencies in Tanaka et al., Hibino, and Tatsuya et al. However, AAPA, either alone or in combination with Tanaka et al., Hibino, and Tatsuya et al., fails to (1) teach the feature of an “audio mixing circuit” as recited in Applicant’s Claim 3; or (2) provide a reason for combining Tanaka et al. and Hibino.

Accordingly, Applicant respectfully submits that the prior art of record, applied alone or in combination, fails to teach or suggest the unique combination and arrangement of elements recited in Claim 3 of the present application. Claim 4 depends upon Claim 3 and is therefore allowable for at least the reasons that Claim 3 is allowable.

Application No. 10/596,765

July 28, 2008

Reply to the Office Action dated March 28, 2008

Page 7 of 7

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a ONE-month extension of time, extending to July 28, 2008, the period for response to the Office Action dated March 28, 2008.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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